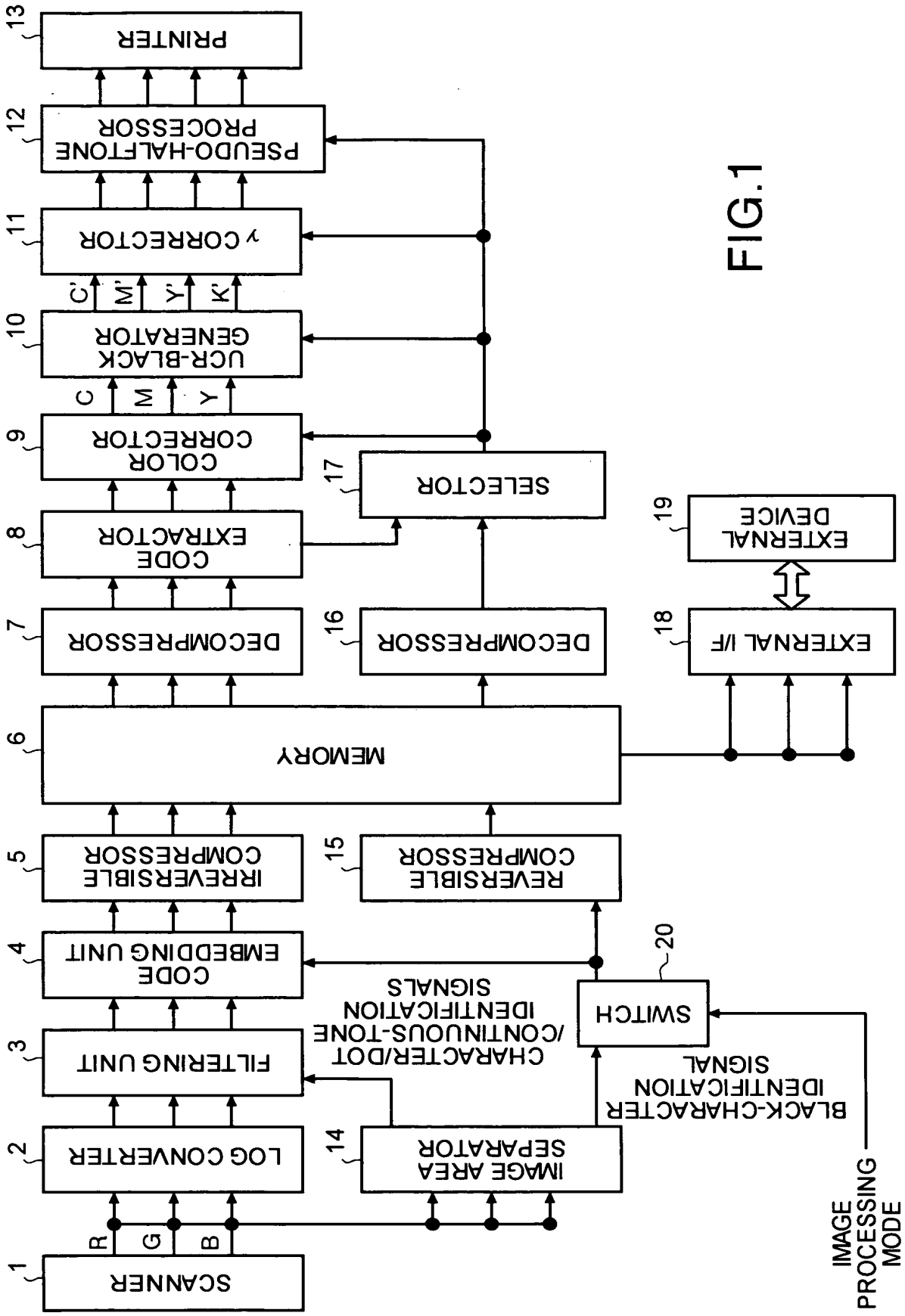

1
SCANNER
R
G
B
2
LOG CONVERTER
3
FILTERING UNIT
4
CODE EMBEDDING UNIT
5
IRREVERSIBLE COMPRESSOR
6
MEMORY
7
DECOMPRESSOR
8
CODE EXTRACTOR
9
COLOR CORRECTOR
C
M
Y
10
UCR-BLACK GENERATOR
C'
M'
Y'
K'
11
γ CORRECTOR
12
PSEUDO-HALFTONE PROCESSOR
13
PRINTER
14
IMAGE AREA SEPARATOR
15
REVERSIBLE COMPRESSOR
16
DECOMPRESSOR
17
SELECTOR
18
EXTERNAL I/F
19
EXTERNAL DEVICE
20
SWITCH
CHARACTER/DOT /CONTINUOUS-TONE IDENTIFICATION SIGNALS
BLACK-CHARACTER IDENTIFICATION SIGNAL
IMAGE PROCESSING MODE

FIG.1

FIG.2

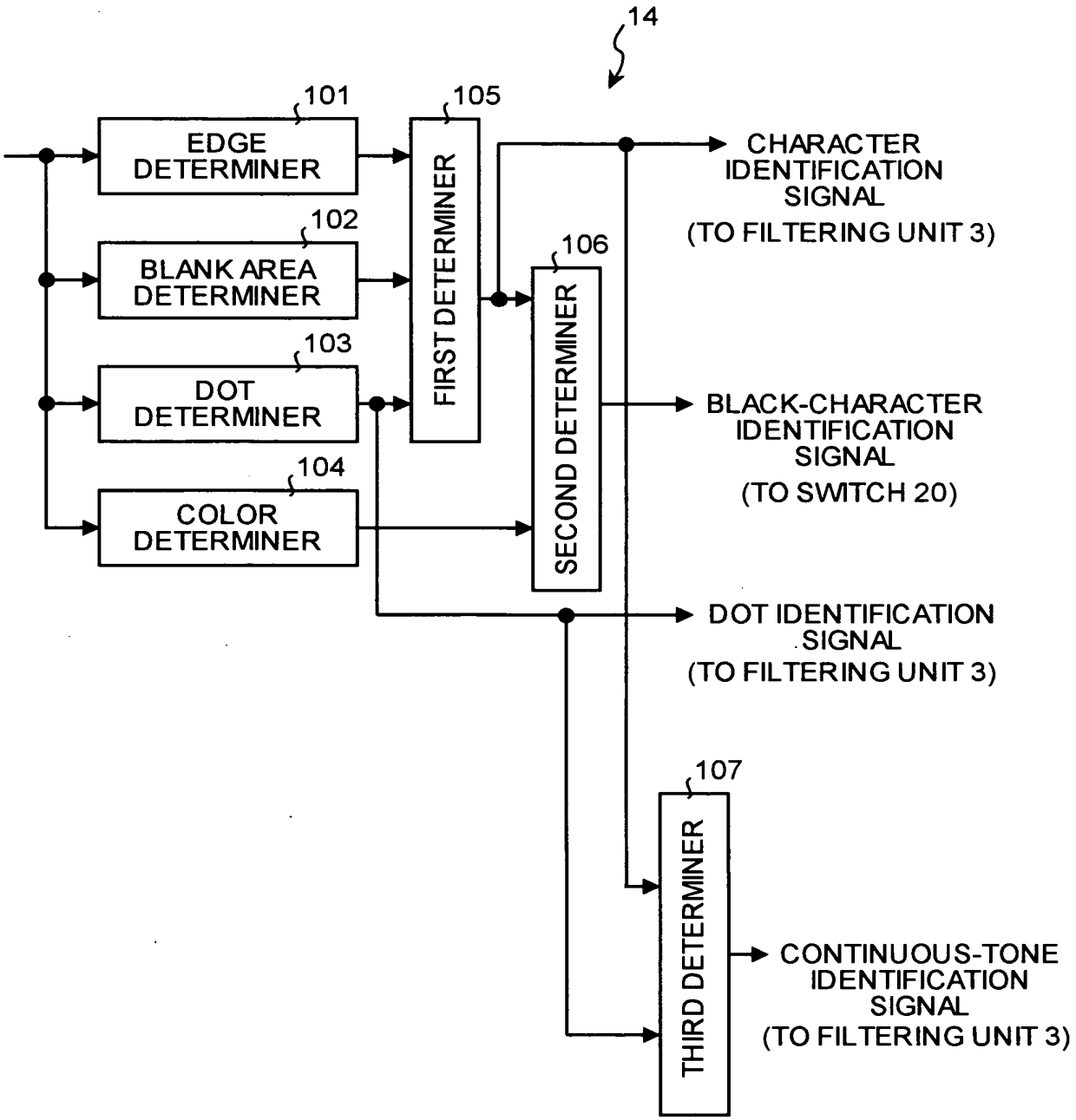

14
101
EDGE DETERMINER
102
BLANK AREA DETERMINER
103
DOT DETERMINER
104
COLOR DETERMINER
105
FIRST DETERMINER
106
SECOND DETERMINER
107
THIRD DETERMINER
CHARACTER IDENTIFICATION SIGNAL
(TO FILTERING UNIT 3)
BLACK-CHARACTER IDENTIFICATION SIGNAL
(TO SWITCH 20)
DOT IDENTIFICATION SIGNAL
(TO FILTERING UNIT 3)
CONTINUOUS-TONE IDENTIFICATION SIGNAL
(TO FILTERING UNIT 3)

FIG.3

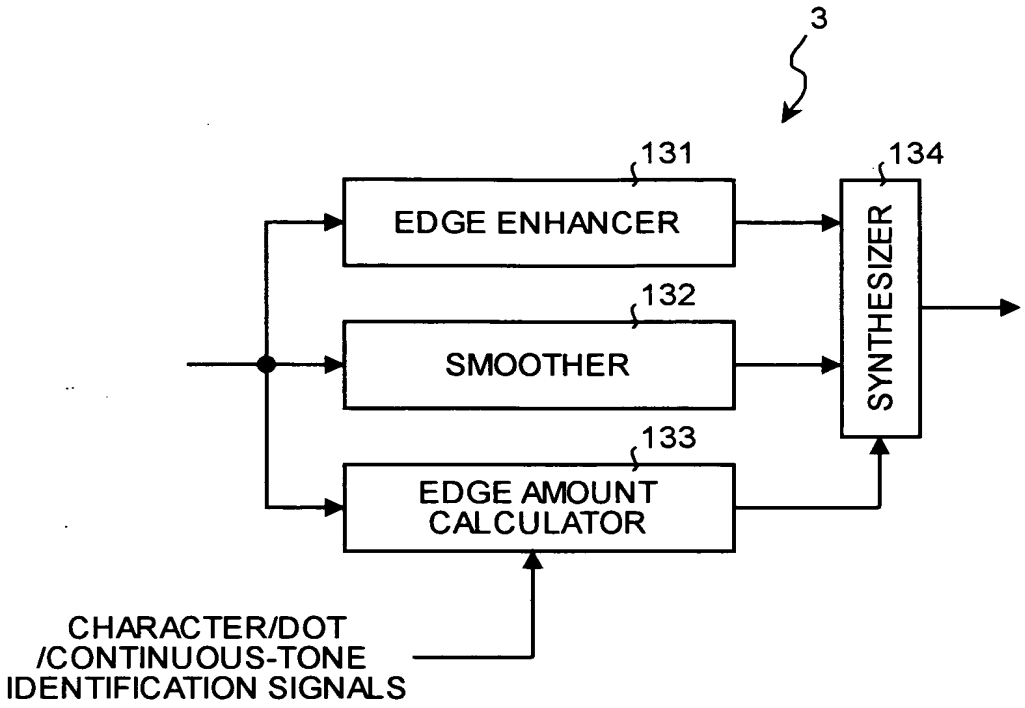

3
131
EDGE ENHANCER
132
SMOOTHER
133
EDGE AMOUNT CALCULATOR
134
SYNTHESIZER
CHARACTER/DOT /CONTINUOUS-TONE IDENTIFICATION SIGNALS

FIG.4

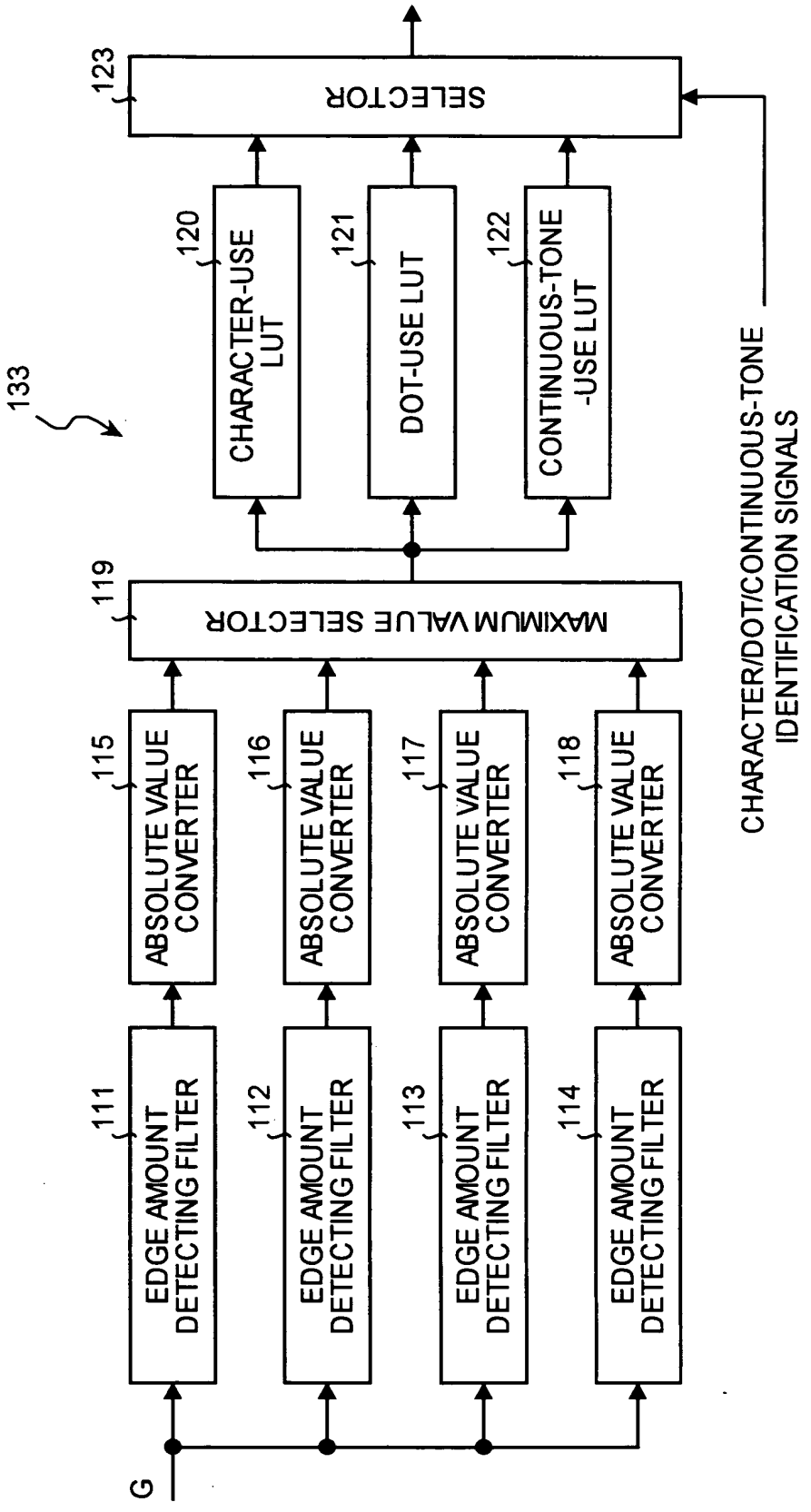

G
EDGE AMOUNT DETECTING FILTER
111
EDGE AMOUNT DETECTING FILTER
112
EDGE AMOUNT DETECTING FILTER
113
EDGE AMOUNT DETECTING FILTER
114
ABSOLUTE VALUE CONVERTER
115
ABSOLUTE VALUE CONVERTER
116
ABSOLUTE VALUE CONVERTER
117
ABSOLUTE VALUE CONVERTER
118
MAXIMUM VALUE SELECTOR
119
CHARACTER-USE LUT
120
DOT-USE LUT
121
CONTINUOUS-TONE -USE LUT
122
SELECTOR
123
133
CHARACTER/DOT/CONTINUOUS-TONE IDENTIFICATION SIGNALS

FIG.5A

-1	-1	-1	0	1	1	1
-1	-1	-1	0	1	1	1
-1	-1	-1	0	1	1	1
-1	-1	-1	0	1	1	1
-1	-1	-1	0	1	1	1
-1	-1	-1	0	1	1	1
-1	-1	-1	0	1	1	1

FIG.5B

-1	-1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-1
0	0	0	0	0	0	0
1	1	1	1	1	1	1
1	1	1	1	1	1	1
1	1	1	1	1	1	1

FIG.5C

0	1	1	1	1	1	1
-1	0	1	1	1	1	1
-1	-1	0	1	1	1	1
-1	-1	0	0	1	1	1
-1	-1	-1	-1	0	1	1
-1	-1	-1	-1	-1	0	1
-1	-1	-1	-1	-1	-1	0

FIG.5D

1	1	1	1	1	1	0
1	1	1	1	1	0	-1
1	1	1	1	0	-1	-1
1	1	1	0	-1	-1	-1
1	1	0	-1	-1	-1	-1
1	0	-1	-1	-1	-1	-1
0	-1	-1	-1	-1	-1	-1

FIG.6

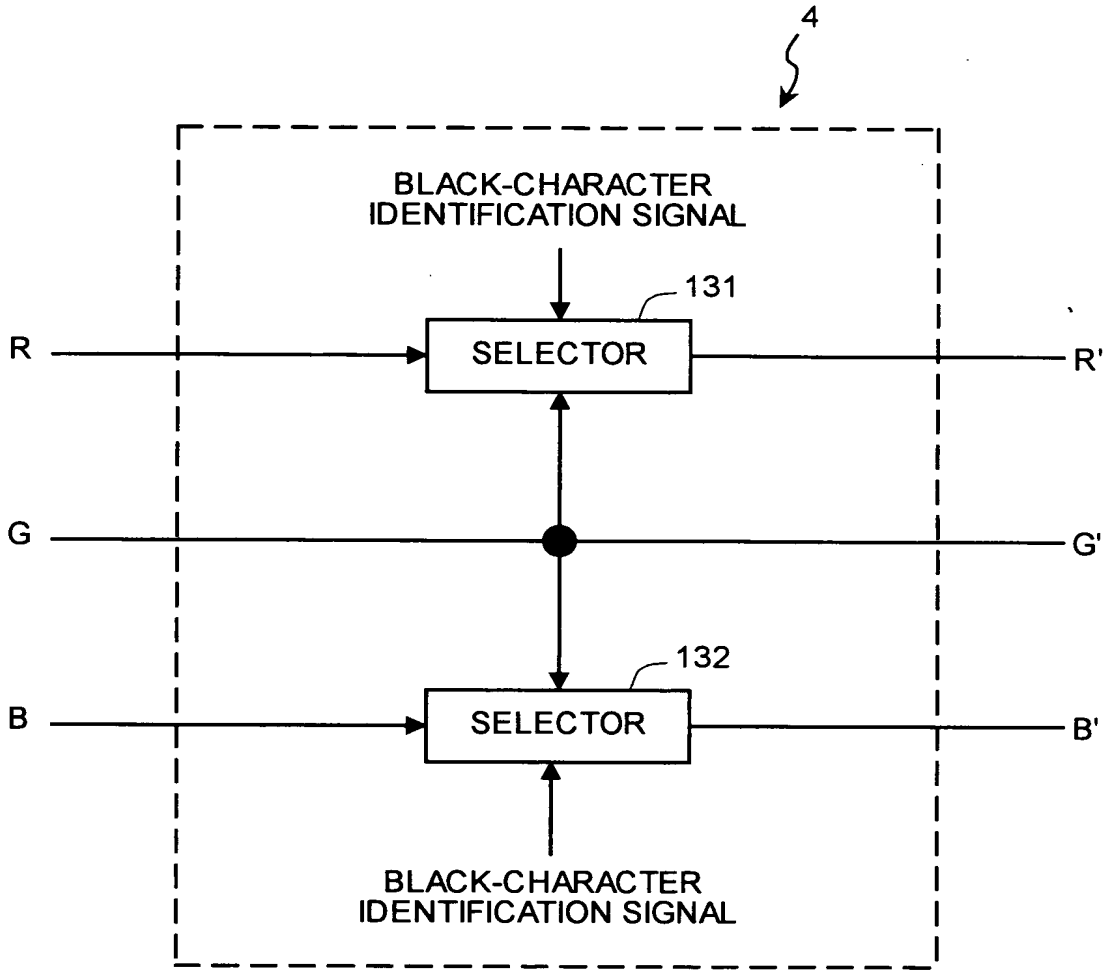

4
BLACK-CHARACTER IDENTIFICATION SIGNAL
131
SELECTOR
R
R'
G
G'
132
SELECTOR
B
B'
BLACK-CHARACTER IDENTIFICATION SIGNAL

FIG.7

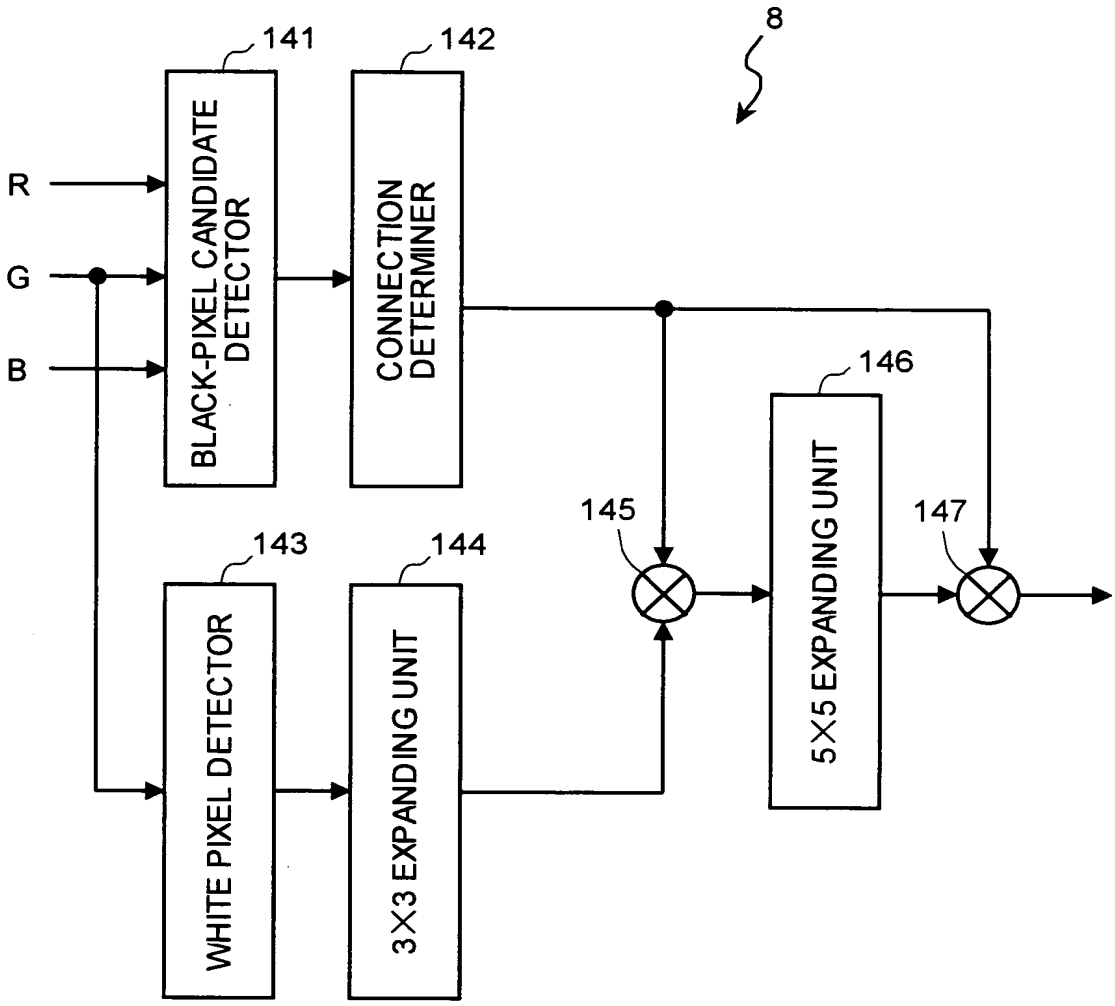

8
141
142
R
G
B
BLACK-PIXEL CANDIDATE DETECTOR
CONNECTION DETERMINER
146
145
147
143
144
WHITE PIXEL DETECTOR
3X3 EXPANDING UNIT
5X5 EXPANDING UNIT

FIG.8

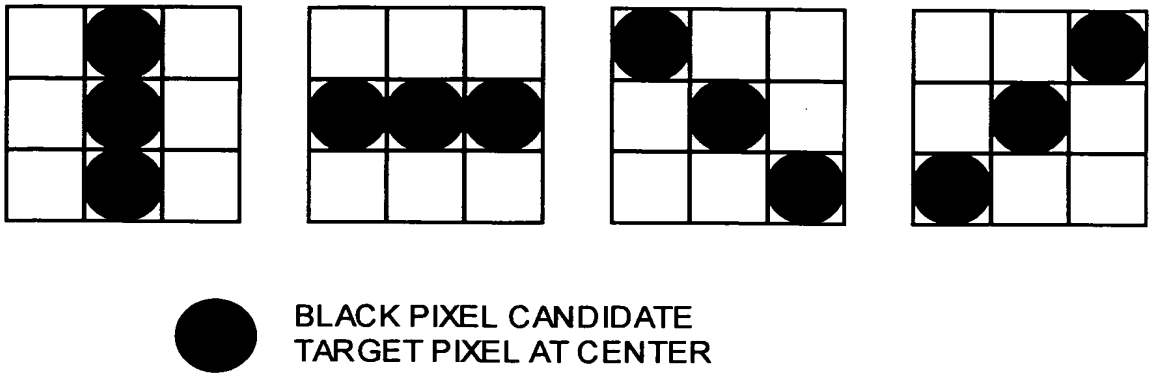
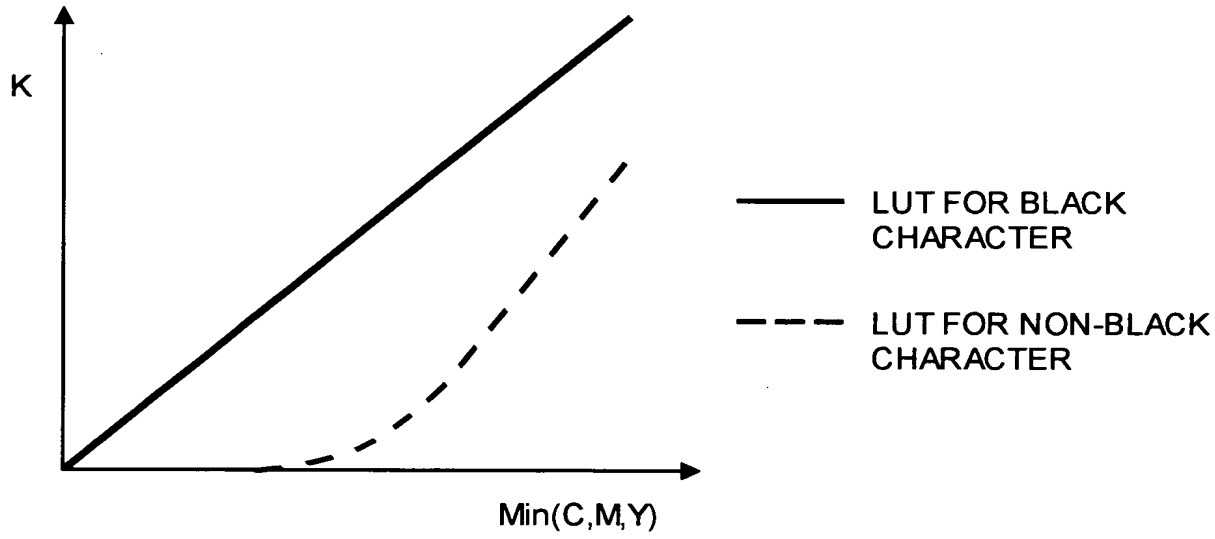


FIG.9



BEST AVAILABLE COPY

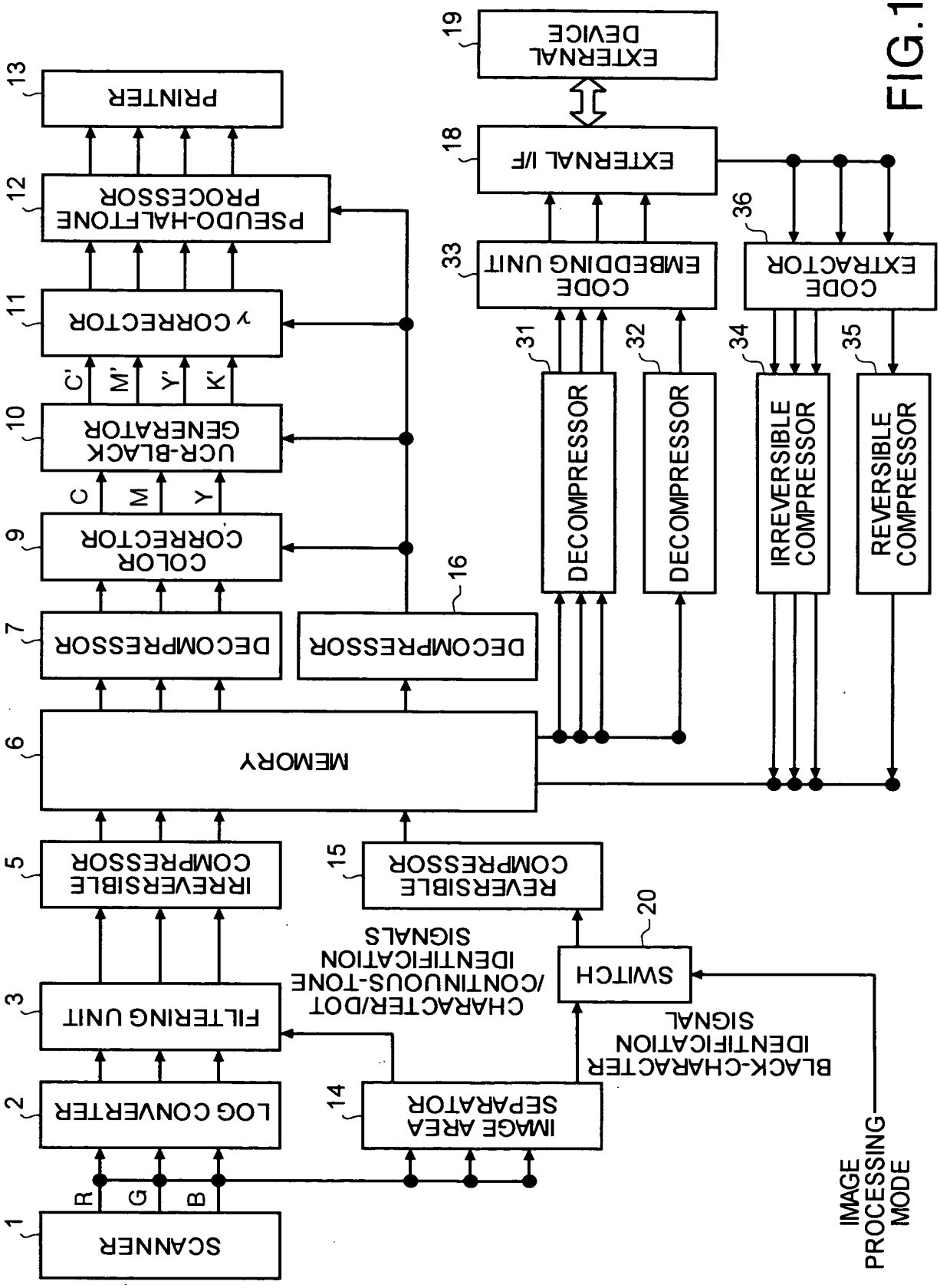

SCANNER
LOG CONVERTER
FILTERING UNIT
IRREVERSIBLE COMPRESSOR
MEMORY
DECOMPRESSOR
COLOR CORRECTOR
UCR-BLACK GENERATOR
γ CORRECTOR
PSEUDO-HALFTONE PROCESSOR
PRINTER
DECOMPRESSOR
IMAGE AREA SEPARATOR
REVERSIBLE COMPRESSOR
SWITCH
CHARACTER/DOT /CONTINUOUS-TONE IDENTIFICATION SIGNALS
BLACK-CHARACTER IDENTIFICATION SIGNAL
IMAGE PROCESSING MODE
EXTERNAL I/F
EXTERNAL DEVICE
CODE EMBEDDING UNIT
CODE EXTRACTOR
DECOMPRESSOR
DECOMPRESSOR
IRREVERSIBLE COMPRESSOR
REVERSIBLE COMPRESSOR
R
G
B
C
M
Y
C'
M'
Y'
K'

FIG.10

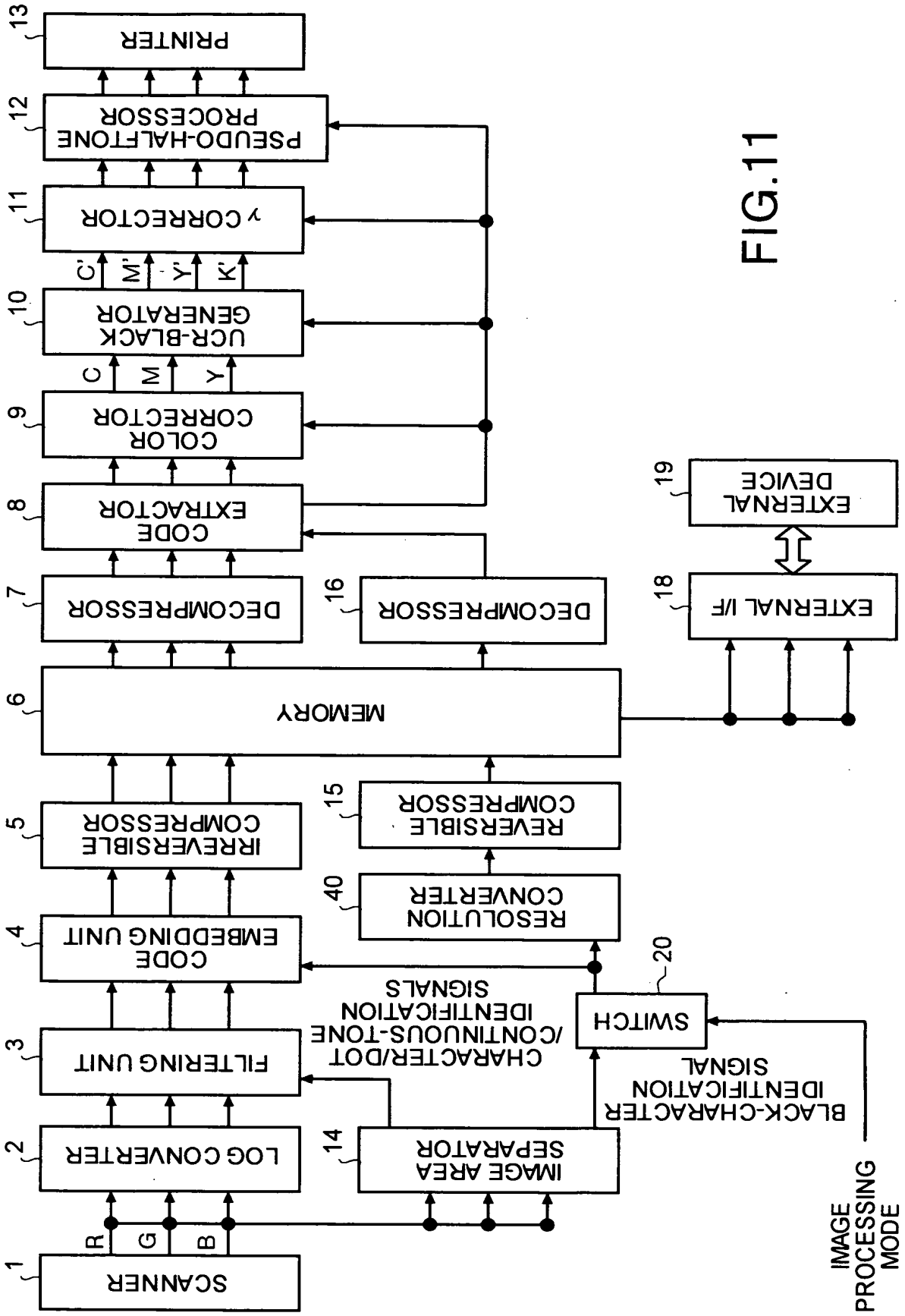

SCANNER
R
G
B
LOG CONVERTER
FILTERING UNIT
CODE EMBEDDING UNIT
IRREVERSIBLE COMPRESSOR
MEMORY
DECOMPRESSOR
CODE EXTRACTOR
COLOR CORRECTOR
C
M
Y
UCR-BLACK GENERATOR
C'
M'
Y'
K'
γ CORRECTOR
PSEUDO-HALFTONE PROCESSOR
PRINTER
IMAGE AREA SEPARATOR
REVERSIBLE COMPRESSOR
RESOLUTION CONVERTER
DECOMPRESSOR
EXTERNAL I/F
EXTERNAL DEVICE
SWITCH
CHARACTER/DOT /CONTINUOUS-TONE IDENTIFICATION SIGNALS
BLACK-CHARACTER IDENTIFICATION SIGNAL
IMAGE PROCESSING MODE

FIG.11

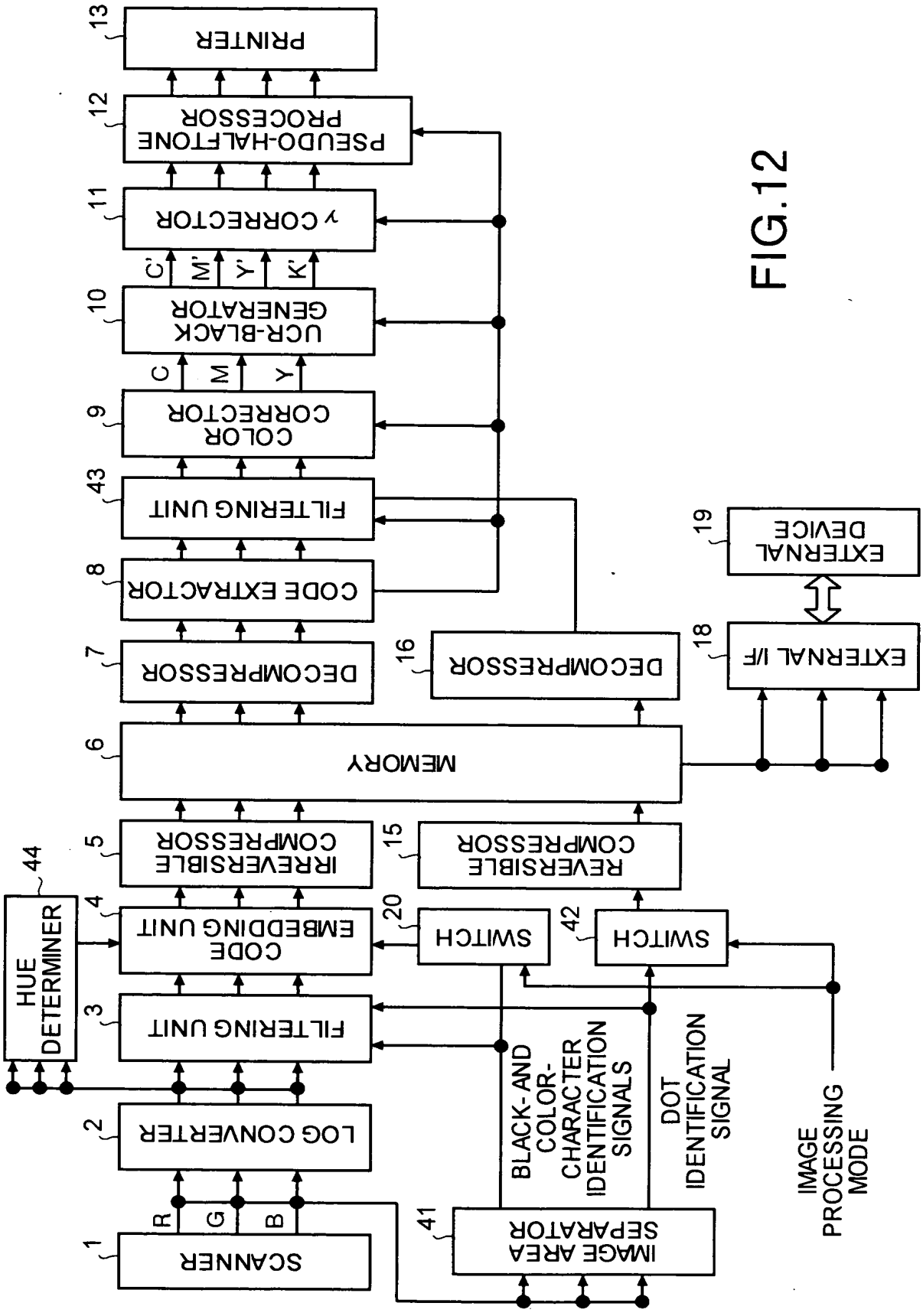

PRINTER
13
PSEUDO-HALFTONE PROCESSOR
12
γ CORRECTOR
11
C'
M'
Y'
K'
UCR-BLACK GENERATOR
10
C
M
Y
COLOR CORRECTOR
9
FILTERING UNIT
43
CODE EXTRACTOR
8
DECOMPRESSOR
7
DECOMPRESSOR
16
MEMORY
6
EXTERNAL DEVICE
19
EXTERNAL I/F
18
IRREVERSIBLE COMPRESSOR
5
REVERSIBLE COMPRESSOR
15
HUE DETERMINER
44
CODE EMBEDDING UNIT
4
SWITCH
20
SWITCH
42
FILTERING UNIT
3
LOG CONVERTER
2
R
G
B
SCANNER
1
IMAGE AREA SEPARATOR
41
BLACK- AND COLOR-CHARACTER IDENTIFICATION SIGNALS
DOT IDENTIFICATION SIGNAL
IMAGE PROCESSING MODE

FIG.12